



Product Name: WABASCA HEAVY CRUDE OIL  
Revision Date: 09 Jan 2013  
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## MATERIAL SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

Product Name: WABASCA HEAVY CRUDE OIL  
Product Description: Petroleum Crude Oil  
Product Code: 949802-00, 97F826  
Intended Use: Crude oil

#### COMPANY IDENTIFICATION

Supplier: EXXONMOBIL UPSTREAM PRODUCTION  
EXXONMOBIL BUILDING  
800 BELL STREET  
HOUSTON, TX. 77002 USA  
24 Hour Health Emergency 609-737-4411  
ExxonMobil Transportation No. 281-834-3296 / EMERGENCY 800-424-9300

### SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

#### Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration <sup>a</sup>
PETROLEUM CRUDE OIL	8002-05-9	100 %

#### Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration <sup>a</sup>
BENZENE	71-43-2	1 - 5%
CYCLOHEXANE	110-82-7	1 - 5%
ETHYL BENZENE	100-41-4	0.1 - 1%
HYDROGEN SULFIDE	7783-06-4	> 0.005 %
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	1 - 5%
POLYNUCLEAR AROMATIC HYDROCARBONS		> 0.1%
SULFUR	7704-34-9	> 1.0 %
TOLUENE	108-88-3	1 - 5%
XYLENES	1330-20-7	1 - 5%

<sup>a</sup> All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

### SECTION 3 HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an ignition.

#### POTENTIAL HEALTH EFFECTS



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May cause cancer. Danger of adverse health effects by prolonged exposure. Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. Hydrogen sulfide, a highly toxic gas, is expected to be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. May be irritating to the eyes, nose, throat, and lungs. Aliphatic hydrocarbon gases may build up in confined spaces and may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in narcosis, unconsciousness, and possibly lead to death. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11).

Target Organs: Nervous system | Blood and/or blood-forming organs | Lung | Skin |

#### ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health: 2	Flammability: 3	Reactivity: 0
HMIS Hazard ID:	Health: 2*	Flammability: 3	Reactivity: 0

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

#### SECTION 4

#### FIRST AID MEASURES

##### INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

##### SKIN CONTACT

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

##### EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

##### INGESTION

Seek immediate medical attention. Do not induce vomiting.

##### NOTE TO PHYSICIAN



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If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

## SECTION 5

## FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** Highly flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Exposure to fire can generate toxic fumes. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Hydrogen sulfide, Smoke, Fume, Sulfur oxides, Incomplete combustion products, Oxides of carbon

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** <21°C (70°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D

**Autoignition Temperature:** N/D

## SECTION 6

## ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

**For emergency responders:** Respiratory protection: half-face or full-face respirator with filter(s) for organic



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vapor and, when applicable, H<sub>2</sub>S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Chemical goggles are recommended if splashes or contact with eyes is possible. Work gloves that are resistant to aromatic hydrocarbons are recommended. If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated. Note: gloves made of PVA are not water-resistant, and are not suitable for emergency use. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic and, if necessary, heat resistant and thermal insulated material is recommended.

#### SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. **Large Spills:** Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**Water Spill:** Stop leak if you can do it without risk. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where indicated in local oil spill contingency plans.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

#### ENVIRONMENTAL PRECAUTIONS

Use booms as a barrier to protect shorelines. Use containment booms when the ambient temperature is below the flash point of the material. **Large Spills:** Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

#### SECTION 7

#### HANDLING AND STORAGE

##### HANDLING

H<sub>2</sub>S is present. Avoid all personal contact. Crude oils can contain trace levels of natural impurities including heavy metals, such as mercury, nickel or lead, as well as naturally occurring radioactive material. As the impurity content may concentrate during refining/processing, process operations, including equipment, materials and products should be evaluated to identify and manage any potential risks to health, safety or the environment or regulatory concerns.

Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. The toxic and olfactory (sense of smell) fatigue properties of hydrogen sulfide require that air monitoring alarms and respiratory protection be used where the concentration might be expected to reach a harmful level, such as in an enclosed space, heated transport vessel, or in a spill or leak situation.

Material may contain trace amounts of naturally occurring radioactive material (NORM), which will accumulate in process equipment and storage vessels. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection



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Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

#### STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

#### SECTION 8

#### EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard		NOTE	Source
BENZENE		OSHA Action level	0.5 ppm	N/A	OSHA Sp.Reg
BENZENE		STEL	5 ppm	N/A	OSHA Sp.Reg.
BENZENE		TWA	1 ppm	N/A	OSHA Sp.Reg.
BENZENE		STEL	1 ppm	N/A	ExxonMobil
BENZENE		TWA	0.5 ppm	N/A	ExxonMobil
BENZENE		STEL	2.5 ppm	Skin	ACGIH
BENZENE		TWA	0.5 ppm	Skin	ACGIH
CYCLOHEXANE		TWA	1050 mg/m <sup>3</sup>	300 ppm	N/A
CYCLOHEXANE		TWA	100 ppm		ACGIH
ETHYL BENZENE		TWA	435 mg/m <sup>3</sup>	100 ppm	N/A
ETHYL BENZENE		TWA	20 ppm		ACGIH
HYDROGEN SULFIDE		Ceiling	20 ppm		OSHA Z2
HYDROGEN SULFIDE		Maximum concentration	50 ppm		OSHA Z2
HYDROGEN SULFIDE		STEL	14 mg/m <sup>3</sup>	10 ppm	N/A
HYDROGEN SULFIDE		TWA	7 mg/m <sup>3</sup>	5 ppm	N/A
HYDROGEN SULFIDE		STEL	5 ppm		ACGIH
HYDROGEN SULFIDE		TWA	1 ppm		ACGIH
N-HEXANE		TWA	1800 mg/m <sup>3</sup>	500 ppm	N/A
N-HEXANE		TWA	50 ppm		ACGIH
NAPHTHALENE		TWA	50 mg/m <sup>3</sup>	10 ppm	N/A
NAPHTHALENE		STEL	15 ppm		ACGIH
NAPHTHALENE		TWA	10 ppm		ACGIH



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TOLUENE		Ceiling	300 ppm		N/A	OSHA Z2
TOLUENE		Maximum concentration	500 ppm		N/A	OSHA Z2
TOLUENE		TWA	200 ppm		N/A	OSHA Z2
TOLUENE		TWA	20 ppm		N/A	ACGIH
XYLEMES		TWA	435 mg/m <sup>3</sup>	100 ppm	N/A	OSHA Z1
XYLEMES		STEL	150 ppm		N/A	ACGIH
XYLEMES		TWA	100 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

## ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Positive-pressure, air-supplied respirator in areas where H<sub>2</sub>S vapors may accumulate is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

**Eye Protection:** Chemical goggles are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical / oil resistant clothing if contact with material is likely.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after



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handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

#### ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

#### SECTION 9

#### PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

#### GENERAL INFORMATION

Physical State: Liquid

Color: Dark Brown

Odor: Rotten Egg

Odor Threshold: N/D

#### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.661 - 1.013

Flash Point [Method]: <21°C (70°F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/D

Boiling Point / Range: > 35°C (95°F)

Vapor Density (Air = 1): N/D

Vapor Pressure: 0 kPa (0 mm Hg) at 20 °C - 106.4 kPa (800 mm Hg) at 20 °C

Evaporation Rate (n-butyl acetate = 1): N/D

pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): N/D

Solubility in Water: Negligible

Viscosity: >0.42 cSt (0.42 mm<sup>2</sup>/sec) at 40 °C

Oxidizing Properties: See Hazards Identification Section.

#### OTHER INFORMATION

Freezing Point: N/D

Melting Point: N/A

Pour Point: -73°C (-100°F) - 48°C (118°F)

Decomposition Temperature: N/D

#### SECTION 10

#### STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.



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**HAZARDOUS POLYMERIZATION:** Will not occur.

**SECTION 11**

**TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY**

<b>Route of Exposure</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
Toxicity (Rat): No end point data for material	Not determined
Irritation: No end point data for material	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
<b>Ingestion</b>	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
<b>Skin</b>	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	May dry the skin leading to discomfort and dermatitis. Based on test data for structurally similar materials.
<b>Eye</b>	
Irritation (Rabbit): Data available.	Irritating and will injure eye tissue. Based on test data for structurally similar materials.

**CHRONIC/OTHER EFFECTS**

**For the product itself:**

Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.

May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.

Crude oil: Contains polycyclic aromatic compounds (PACs). Prolonged and / or repeated exposure by skin or inhalation of certain PACs may cause cancer of the skin, lung, and of other sites of the body. In animal studies, some crudes produced skin tumors in mice, while other crudes produced no tumors. Developmental studies of crude oil in lab animals showed reduced fetal weight and increased fetal resorptions at maternally toxic levels. Repeated dermal exposure to crude oils in rats resulted in toxicity to the blood, liver, thymus, and bone marrow.

**Contains:**

BENZENE: Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies. HYDROGEN SULFIDE : Chronic health effects due to repeated exposures to low levels of H<sub>2</sub>S have not been established. High level (700 ppm) acute exposure can result in sudden death. High



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concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of overexposure to H<sub>2</sub>S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucous membranes and the respiratory system and have been implicated in some eye damage.

**NAPHTHALENE:** Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**N-HEXANE:** Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

**TOLUENE :** Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

**ETHYLBENZENE:** Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NAPHTHALENE	91-20-3	2, 5
BENZENE	71-43-2	1, 3, 6
ETHYL BENZENE	100-41-4	5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC  
2 = NTP SUS

3 = IARC 1  
4 = IARC 2A

5 = IARC 2B  
6 = OSHA CARC

**SECTION 12**

**ECOLOGICAL INFORMATION**

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**MOBILITY**

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Low molecular wt. component -- Expected to be inherently biodegradable



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High molecular wt. component -- Expected to biodegrade slowly.

**Photolysis:**

More water soluble component -- Expected to degrade at a moderate rate in water when exposed to sunlight.

**Atmospheric Oxidation:**

More volatile component -- Expected to degrade rapidly in air

**BIOACCUMULATION POTENTIAL**

Components -- Has the potential to bioaccumulate.

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**SECTION 13**

**DISPOSAL CONSIDERATIONS**

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

**REGULATORY DISPOSAL INFORMATION**

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY, TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

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**SECTION 14**

**TRANSPORT INFORMATION**

**LAND (DOT)**

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

Hazard Class & Division: 3

ID Number: 3494

Packing Group: II

ERG Number: 131

Label(s): 3 (6.1)

Transport Document Name: UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC, 3 (6.1), PG II



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**LAND (TDG)**

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

Hazard Class & Division: 3 (6.1)

UN Number: 3494

Packing Group: II

Footnote: If shipped over water, product TDG classification as shown below for SEA (IMDG).

**SEA (IMDG)**

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

Hazard Class & Division: 3

EMS Number: F-E, S-E

UN Number: 3494

Packing Group: II

Marine Pollutant: Yes

Label(s): 3 (6.1)

Transport Document Name: UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC, 3 (6.1),

PG II, (21°C c.c.), MARINE POLLUTANT

**AIR (IATA)**

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC

Hazard Class & Division: 3

UN Number: 3494

Packing Group: II

Label(s) / Mark(s): 3 (6.1)

Transport Document Name: UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC, 3 (6.1),

PG II

**SECTION 15**

**REGULATORY INFORMATION**

**OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

**Complies with the following national/regional chemical inventory requirements:** AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

**EPCRA SECTION 302:** This material contains no extremely hazardous substances.

**CERCLA:** This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Fire, Delayed Health.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
ETHYL BENZENE	100-41-4	0.1 - 1%
POLYNUCLEAR AROMATIC HYDROCARBONS		> 0.1%



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NAPHTHALENE	91-20-3	1 - 5%
N-HEXANE	110-54-3	1 - 5%
BENZENE	71-43-2	1 - 5%
CYCLOHEXANE	110-82-7	1 - 5%
XYLEMES	1330-20-7	1 - 5%
PETROLEUM CRUDE OIL	8002-05-9	100 %

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19
CYCLOHEXANE	110-82-7	1, 4, 13, 16, 17, 18, 19
ETHYL BENZENE	100-41-4	1, 4, 10
HYDROGEN SULFIDE	7783-06-4	1, 4
N-HEXANE	110-54-3	1, 4, 13, 16, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 9, 10, 13, 16, 17, 18, 19
PETROLEUM CRUDE OIL	8002-05-9	13, 18, 17, 18, 19
SULFUR	7704-34-9	17, 19
TOLUENE	108-88-3	1, 4, 11, 13, 15, 16, 17, 18, 19
XYLEMES	1330-20-7	1, 4, 9, 13, 15, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
N/D = Not determined, N/A = Not applicable	

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 06: Protective Measures was modified.  
Section 09: Boiling Point C(F) was modified.  
Section 09: Pour Point C(F) was modified.  
Section 09: Vapor Pressure was modified.  
Hazard Identification: Health Hazards was modified.  
Section 09: Relative Density - Header was modified.  
Section 09: Flash Point C(F) was modified.  
Section 09: Viscosity was modified.  
Section 14: Transport Document Name was modified.  
Composition: Component table was modified.  
Section 15: List Citations Table was modified.  
Section 11: Tox List Cited Table was modified.  
Section 15: SARA (313) TOXIC RELEASE INVENTORY - Table was modified.



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Composition: Component table was modified.

Section 16: Health Hazards was modified.

Section 08: Exposure Limits Table was modified.

Section 11: Chronic Tox - Component was modified.

Section 01: Company Contact Methods Sorted by Priority was modified.

Section 04: Pre-existing medical conditions which may be aggravated by exposure - Header was deleted.

Section 04: First Aid Pre-existing Medical Conditions was deleted.

**THIS MSDS COVERS THE FOLLOWING MATERIALS:** CRUDE OIL SOUR ("Sour" applied by definition of Society of Petroleum Engineers for oils containing sulfur compounds >1%)

#### **PRECAUTIONARY LABEL TEXT:**

**Contains:** PETROLEUM CRUDE OIL

**DANGER!**

#### **HEALTH HAZARDS**

May cause cancer. Danger of adverse health effects by prolonged exposure. Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11). Hydrogen sulfide may concentrate in confined spaces and cause irritation, unconsciousness and/or death.

**Target Organs:** Nervous system | Blood and/or blood-forming organs | Lung | Skin |

#### **PHYSICAL HAZARDS**

Extremely flammable. Material can accumulate static charges which may cause an ignition.

#### **PRECAUTIONS**

H<sub>2</sub>S is present. Avoid contact with skin. Avoid contact with eyes. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. The toxic and olfactory (sense of smell) fatigue properties of hydrogen sulfide require that air monitoring alarms and respiratory protection be used where the concentration might be expected to reach a harmful level, such as in an enclosed space, heated transport vessel, or in a spill or leak situation.

#### **FIRST AID**

**Inhalation:** Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

**Eye:** Flush thoroughly with water for at least 15 minutes. Get medical assistance.

**Oral:** Seek immediate medical attention. Do not induce vomiting.

**Skin:** Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.



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**FIRE FIGHTING MEDIA**

Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**SPILL/LEAK**

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.

**Water Spill:** Stop leak if you can do it without risk. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Report spills as required to appropriate authorities. If permitted by regulatory authorities the use of suitable dispersants should be considered where indicated in local oil spill contingency plans.

**Use**

Not intended or suitable for use in or around a household or dwelling.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

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